Application for 2003 Urban Water Conservation Grant Funding

Residential High Efficiency Clothes Washer Rebate Program Proposal

Metropolitan Water District of Southern California

MWD
METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

Application Part A

A-1 Urban Water Conservation Grant Application Cover Sheet

1. Applicant (Organization or affiliation): Metropolitan Water District of Southern California
2. Project Title: Residential High Efficiency Clothes Washer Rebate Program

3. Person authorized to sign and submit proposal:

Name, Title	Steve Arakawa, Manager, Water Resources Management Group
Mailing address	P.O. Box 54153 Los Angeles, CA 90054-0153
Telephone	(213) 217-6052
Fax	(213) 217-6119
E-mail	sarakawa@mwdh2o.com

4. Contact person (if different):

Name, Title	Carlos de Leon
Mailing address	same as above
Telephone	(213) 217-6594
Fax	(213) 217-7159
E-mail	jdeleon@mwdh2o.com

5. Funds requested (dollar amount): $2,700,000
6. Applicant funds pledged (local cost share) (dollar amount): $1,050,00
7. Total project costs (dollar amount): $3,750,000
8. Estimated net water savings (acre-feet/year): 644.4
   - Estimated total amount of water to be saved (acre-feet): 9,666 Over 15 years
   - Benefit/cost ratio of project for applicant: 1.17
   - Estimated $/acre-feet of water to be saved: 388
9. Project life (month/year to month/year): 7/03 to 6/06
10. State Assembly District where the project is to be conducted: 35, 37-80
11. State Senate District where the project is to be conducted: 17, 19-40
12. Congressional District(s) where the project is to be conducted: 23-53
13. County where the project is to be conducted: Los Angeles, Orange, Riverside, San Bernardino, San Diego, and Ventura.
14. Do the actions in this application involve physical changes in land use, or potential future changes in land use?

    (a) Yes _____
    (If yes, complete the land use check list at http://www.CALFED.water.ca.gov/adobe_pdf/Questionnaires_EC_Permits_LandUse.pdf and submit it with the proposal

    (b) No **X**

A-2 Application Signature Page

By signing below, the official declares the following:

The truthfulness of all representations in the application;

The individual signing the form is authorized to submit the application on behalf of the applicant;

The individual signing the form read and understood the conflict of interest and confidentiality section and waives any and all rights to privacy and confidentiality of the application on behalf of the applicant; and

The applicant will comply with all terms and conditions identified in this Application Package if selected for funding.

ORIGINAL SIGNED BY:
STEPHEN N. ARAKAWA, MANAGER
MWD WATER RESOURCE MANAGEMENT GROUP
DATED NOV 26, 2002

_____	_____	_____
Signature	Name and title	Date

A-3 Application Checklist

Part A: Project Description, Organizational, Financial and Legal Information
___√___A-1 Urban Water Conservation Grant Application Cover Sheet
___√___A-2 Application Signature Page
___√___A-3 Application Checklist
___√___A-4 Description of project
__N/A__A-5 Maps
___√___A-6 Statement of work, schedule
___√___A-7 Monitoring and evaluation
___√___A-8 Qualification of applicant and cooperators
___√___A-9 Innovation
___√___A-10 Agency authority
___√___A-11 Operation and maintenance (O&M)
Part B: Engineering and Hydrologic Feasibility (construction projects only)
__N/A__B-1 Certification statement
__N/A__B-2 Project reports and previous studies
__N/A__B-3 Preliminary project plans and specifications
__N/A__B-4 Construction inspection plan
Part C: Plan for Environmental Documentation and Permitting
___√___C-1 CEQA/NEPA
___√___C-2 Permits, easements, licenses, acquisitions, and certifications
___√___C-3 Local land use plans
___√___C-4 Applicable legal requirements
Part D: Need for Project and Community Involvement
___√___D-1 Need for project
___√___D-2 Outreach, community involvement, support, opposition
Part E: Water Use Efficiency Improvements and Other Benefits
___√___E-1 Water use efficiency improvements
___√___E-2 Other project benefits
Part F: Economic Justification, Benefits to Costs Analysis
___√___F-1 Net water savings
___√___F-2 Project budget and budget justification
___√___F-3 Economic efficiency
Appendix: Benefit/Cost Analysis Tables
___√___Tables 1; 2; 3; 4a, 4b, 4c, 4d; and 5

A-4 Description of Project

The Metropolitan Water District of Southern California (Metropolitan) is a regional water wholesaler serving 26 member agencies in Southern California. To meet increasing water demands, Metropolitan and its member agencies pursue a multitude of opportunities to implement water demand management projects. A recently introduced technology in the American marketplace is the high-efficiency clothes washer (HECW). Water savings for HECWs is estimated between 5,000 and 8,000 gallons annually, per machine, as compared to a conventional washer. Energy savings are a significant feature of these HECWs as well.

Most HECWs retail cost range from $600 to $1,100 (This compares to conventional clothes washers that retail in the $300-$400 range). This difference in price makes it hard for the average consumer to select the higher priced machines, even though the HECW may pay back the difference in lowered utility costs in as little as three years. To assist consumers in purchasing the more expensive HECWs, this grant proposal is intended to provide a larger rebate amount of $100 or more. As a result, water agencies will accelerate broader adoption of this water efficient technology and achieve water savings in the process.

To continue supporting its member agencies in expanding customer participation in HECW rebate programs, Metropolitan is proposing a Residential High-Efficiency Clothes Washers (HECWs) Rebate Program that will provide its member agencies a $100 washer rebate. Existing HECW rebate programs would be allowed to continue uninterrupted. A total of 30,000 rebates (at $100 each) would be offered to residential customers through Metropolitan's participating member agencies. The rebates would be issued in an on-going fashion over the three-year period of the grant. Metropolitan would provide $750,000 in rebate funding ($25 per unit) and an additional $300,000 ($10 per unit) in promotional support. Metropolitan is requesting $2,250,000 ($75 per unit) toward rebates and $450,000 ($15 per unit) for program administration, for a total request of $2,700,000 from Proposition 13 funds. Additional funding is expected from Metropolitan's member agencies to increase the total rebate amount to make it more attractive to their customers. The 30,000 HECWs are expected to save 9,666 acre-feet of water over their functional life.

A-4 Description of Project (Continued)

The funding request is composed of the following elements:

	Incentive/ HECW	Total incentive value (@ 30,000 units)	Promotional Assistance ($10 per HECW)	Project Administration (@ $15 per HECW)	Totals (%)
Prop. 13	$75	$2,250,000		$450,000	$2,700,000 (75%)
Met	$25	$750,000	$300,000		$1,050,000 (25%)
Total	$100	$3,000,000	$300,000	$450,000	**$3,750,000**

The project scope is to achieve the installation of 30,000 HECWs in Metropolitan's service territory. The objectives of the project are as follows:

- Influence the buying public to purchase a HECW instead of a conventional washer. This would be done by increasing public awareness that rebate incentives are being offered by water agencies for the purchase of HECW,
- Achieve accelerated water savings by increasing the rate of HECW installations,
- Maintain the momentum of Metropolitan's highly successful HECW rebate program, which was co-funded with CALFED funds.
- Provide water agencies with the opportunity to augment the $100 rebate with additional funding to create a greater incentive for their customers to purchase HECWs,
- Provide Metropolitan's member agencies an incentive for local program marketing,
- Save 9,666 acre-feet of water over the 15-year life of the program's HECW installations (0.322 AF saved per HECW x 30,000 machines).

A-5 MAPS

Not applicable for this project

A-6 STATEMENT OF WORK, SCHEDULE

1. Metropolitan has recently completed a HECW rebate program that used a CALFED grant money to provide its member agencies a higher rebate of $100 per installed HECW. The higher rebate was a considerable increase from MWDs $35 washer rebate. The program was so successful that in only 10 months, 10,000 washers were installed in MWDs service area and the $925,000 CALFED grant money was exhausted. Receipt of the requested grant funds will allow this successful program to continue with minimal interruption. The contracts and program mechanics are already in-place, and momentum is established. Member agencies will be able to rapidly implement their HECW programs.

A-6 STATEMENT OF WORK, SCHEDULE (CONTINUED)

2. Tasks, schedule and deliverables.

	Task	Month Due*	Deliverable
1	Amend contracts for participating member agencies	1	Amended contracts in-place
2	Develop promotional strategy	3	Advertisement plan
3	Add non-participating member agencies to the program	On-going	Addition of member agencies previously not participating
4	Implement promotion	5, 17, 26	Placed advertisements
5	Perform installation assessment	On-going	Documentation of findings
6	Provide Quarterly Reports	3,6,9,12…36	Quarterly Reports

* the number of months after receipt of grant funds

3. **QUARTERS**

October 2003 – October 2006

Tasks	1	2	3	4	5	6	7	8	9	10	11	12
Amend Contract for participating member	■											
Develop promo strategy	■											
Add non-participating agencies to program	■	■	■	■	■	■	■	■	■			
Implement promotions		■				■			■			
Perform installation assessment				■			■			■		
Provide Quarterly Reports	■	■	■	■	■	■	■	■	■	■	■	■
Quarterly Expenditures (No. rebates invoiced)		1200	**1200**	1600	2000	2400	2400	3200	3200	4000	4000	4800
Prop 13 Rebate @ $75	-	90	90	120	150	180	180	240	240	300	300	360
Prop 13 Admin. @ $15	-	18	18	24	30	36	36	48	48	60	60	72
Prop 13 Expenditures	-	**108**	**108**	**144**	**180**	**216**	**216**	**288**	**288**	**360**	**360**	**432**
Metropolitan Incentives	-	30	30	40	50	60	60	80	80	100	100	120
Promo by MWD@ $10	-	12	12	16	20	24	24	32	32	40	40	48
Total Cost Share		**42**	**42**	**56**	**70**	**84**	**84**	**112**	**112**	**140**	**140**	**168**
Project Total	0	**150**	**150**	**200**	**250**	**300**	**300**	**400**	**400**	**500**	**500**	**600**

A-7 Monitoring and evaluation

Monitoring and assessing the program's progress will be accomplished via procedures that have been established in Metropolitan's HECW Program. Accompanying each invoice from the member agencies for HECW rebates paid will be an electronic database that identifies each customer who received a rebate. The database includes customer name, address, (with zip code), telephone number, make and model of HECW purchased, purchase price and the date the rebate was paid. In addition to the member agencies being responsible for verification, Metropolitan may spot-check the installation of HECWs at residences reported to have received a rebate. Also at that time, a brief customer satisfaction survey will be completed as a vehicle to assess the success of the program from the customer's perspective. The results of those surveys will also be used as promotional testimony.

Metropolitan will conduct water savings evaluations. The use of Conservation Credit funding presupposes a level of savings that cannot be well quantified at present. With a greater volume of HECW retrofits, the ability to do more rigorous analysis becomes possible. Metropolitan and its member agencies are collecting sufficient data to develop a regional savings evaluation. This will be done as part of Metropolitan's ongoing effort to substantiate the water savings generated from the financial investments it makes.

A-8 Qualifications of Applicant and Cooperators

1. See next page for resume of Carlos de Leon, P.E., Resource Specialist
2. Cooperating Agencies - Metropolitan currently has agreements with 17 of its 26 member agencies to co-fund HECW rebate programs. It expects to execute agreements with some the remaining 9 member agencies may desire to participate in the regional HECW rebate program. These member agencies may wish to see the program implemented first, before expressing interest in the program. They tend to be the smaller agencies that may have trouble allocating staff to implement the program. In addition to the water agencies, Metropolitan will explore means of working cooperatively with private energy suppliers, such as Southern California Edison, San Diego Gas & Electric, Southern California Gas Company and various sanitation districts.

JUAN CARLOS DE LEON
27642 North Spandau Drive
Santa Clarita, CA 91350
(661) 296-9128

EDUCATION

B.S. in Engineering, May 1984
California State University, Northridge

CERTIFICATION

Registered Professional Civil Engineer (Certificate No. C54063)
State of California, Board of Registration for Civil Engineers

EXPERIENCE

April 2001-
Present

Water Resource Specialist – *Water Resource Management Group*
Metropolitan Water District of Southern California

- Administer and Manage Metropolitans Residential Ultra Low Flow Toilet (ULFT) and Residential High Efficiency Clothes Washer (HECW) Programs.

June 1998-
April 2001

Associate Engineer – *Project Management Branch*
Metropolitan Water District of Southern California

- Prepare Project Management Plans (PMP) for Capital Projects.
- Prepare Monthly Status Reports (MSR) for Capital Projects.
- Monitor and track consultants agreements.
- Monitor and track project costs.

Oct 1994-
June 1998

Associate Engineer - *Quality Control and Value Engineering Branch*
Metropolitan Water District of Southern California

- Established a Value Engineering (VE) program.
- Supervised and administered VE studies
- Quality Assurance duties; reviewed plans and specifications
- Coordinated completion of Benchmark and Productivity Studies.

Nov 1989-
Oct 1994

Civil Engineering Associate
City of Santa Clarita

- Construction contract administration for Capital Improvement Projects.
- Supervised and monitored consultants.
- Prepared and evaluated Request for Proposals (RFP's).
- Negotiated contracts to procure engineering services.
- Prepared full bid packages, specifications and contract documents.
- Assessed and processed public permits, right-of-way acquisition, and utility coordination for Capital Improvement Projects.
- Developed the City's Five Year Capital Improvement Program.
- Acted as Liaison with MTA, and LA County Department of Public Works.

Juan Carlos de Leon
Page 2

Nov 1987 - Nov 1989 — ***Civil Engineering Associate -*** *Land Development Division*
City of Los Angeles, Department of Public Works

- Supervised and prepared the City Engineers's report for parcel maps, zone changes & variances and environmental impact reports.
- Performed right-of-way engineering for dedications and quit claims of public easements, transfers of jurisdiction, and street vacations.

June 1987 - Nov 1987 — ***Civil Engineering Assistant*** *- B-Permit Section*
City of Los Angeles, Department of Public Works

- Reviewed, approved building plans and permits for highway dedication and driveway clearance.
- Prepared construction bond estimates, and issued performance & labor bonds for private development projects.
- Processed and issued revocable permits for public encroachments.
- Assisted the public at permit counter.

July 1984 - June 1987 — ***Civil Engineering Assistant*** *- Wastewater Engineering Division*
City of Los Angeles, Department of Public Works

- Planned, designed, and administered major sewer projects.
- Performed hydrologic and hydraulic studies to determine futur sewer needs.
- Processed, designed, and administered sewer Assessment Act Projects.
- Plan checked sewer improvement plans submitted by private engineers.
- Determined sewer improvements and fees for private development proposals.
- Assisted the public at permit counter.
- Reviewed, and approved building plans and permits.

May 1984 - July 1984 — ***Student Engineer*** *- Valley District Office*
City of Los Angeles, Department of Building & Safety

- Provided assistance at zoning counter. Duties included checking legal descriptions and providing zoning information for Building Permit applications.
- Checked and reviewed building plans and structural calculations for single family dwellings.

May 1982 - Sept. 1982 — ***Student Engineer***
Bechtal Power Corporation, Norwalk, Ca

- Researched specifications for digital and analog instrumentation for the Arizona Nuclear Power Project. Duties included interacting with vendors and private engineers.

A-9 Innovation

This project will continue to utilize innovative technologies of High Efficiency Clothes Washers. Recent technological innovations have resulted in HECWs with higher water efficiency levels. Manufacturers are now making HECWs with a Water Factor (number of gallons needed for each cubic foot of laundry) as low as 5.5. As a result, energy costs are also reduced significantly. HECWs save energy because most of the energy needed for clothes washing goes to heating the water.

A-10 Agency Authority

1. **Does the applicant (official signing A-2, Application Signature Page) have the legal authority to submit an application and to enter into a funding contract with the State? Provide documentation such as an agency board resolution or other evidence of authority.**

   Yes. MWD's Administrative Code (§ 8115), as last amended by MWD's Board of Director's by Minute Order 44582 (August 20, 2001), provides that "if the amount payable or expected to be paid by the [Metropolitan Water] District under the terms of a contract is less than $250,000, the contract my be executed by the Chief Executive Officer unless otherwise directed by the Board." (MWD Admin. Code § 8115 (c).) Because Metropolitan will not be required to make payments of $250,000 or more under the terms of a funding contract with the State, Metropolitan's Chief Executive Officer or his delegate are authorized to submit this application and to enter into the funding contract.

2. **What is the legal authority under which the applicant was formed and is authorized to operate?**

   Metropolitan is a quasi-municipal corporation created in 1929 pursuant to the Metropolitan Water District Act. (Stats. 1927, ch. 429; City of Pasadena v. Chamberlain (1928) 204 Cal. 653, 663); Metro. Water Dist. v. County of Riverside (1943) 21 Cal.2d 640, 642.) Operating under the authority of the Metropolitan Water District Act (Stats. 1969, ch. 209, as amended; Water Code App. §109), Metropolitan's primary responsibility is to acquire and develop water for delivery for municipal and domestic uses within Metropolitan's service area. (See Water Code App. § 109-25.)

3. **Is the applicant required to hold an election before entering into a funding contract with the State?**

   No. See the Response to 1, above. No action by Metropolitan's Board of Directors is required for Metropolitan's Chief Executive Office or his delegate to enter into a funding contract with the State.

A-10 AGENCY AUTHORITY (CONTINUED)

4. Will the funding agreement between the applicant and the State be subject to review and/or approval by other government agencies? If yes, identify all such agencies (e.g. Local Area Formation Commission, local governments, U.S. Forest Service, California Coastal Commission, California Department of Health Services, etc.).

No.

5. Is there any pending litigation that may impact the financial condition of the applicant, the operation of the water facilities, or its ability to complete the proposed project? If none is pending, so state.

No. While Metropolitan is a party to various legal proceedings, Metropolitan does not believe an adverse ruling in any pending litigation would substantially impact Metropolitan's financial conditions or materially impair the operation of Metropolitan's water facilities or its ability to complete the proposed project. However, in the interest of full disclosure, the following three cases are noted.

In February 2001, a case entitled Dewayne Cargill et al. v. Metropolitan Water District of Southern California et al. (Los Angeles Superior Court No. BC 191881) was filed against Metropolitan. This case is a class action lawsuit brought by various categories of temporary workers and certain temporary agencies, claiming that Metropolitan misclassified them to avoid providing them the same rights and benefits given to regular employees. In the first phase of the case, the trial court ruled for the plaintiffs. Metropolitan appealed the ruling to the California Court of Appeal, which upheld the lower court ruling in favor of the plaintiffs. The California Supreme Court granted Metropolitan's petition for review. Oral argument is expected in late 2002 or early 2003. The outcome of this litigation is uncertain; a result adverse to Metropolitan could have an adverse effect on Metropolitan's financial condition.

In April 2000, the Soboba Band of Mission Indians filed a lawsuit against Metropolitan in Federal district court regarding the affect of a Metropolitan water tunnel on reservation groundwater. The lawsuit seeks an injunction to halt the flow of groundwater, unspecified damages, or restitution in lieu of damages. The outcome of this litigation is uncertain; a result adverse to Metropolitan could have an adverse effect on Metropolitan's financial condition and could potentially obligate Metropolitan to deliver some amount of water to the reservation.

In September 2000, the Third District Court of Appeals issued its decision in Planning and Conservation League v. California Department of Water Resources. This case was an appeal of (i) a challenge under the California Environmental Quality Act (CEQA) of the adequacy of the environmental

A-10 AGENCY AUTHORITY (CONTINUED)

documentation prepared with respect to certain amendments to the State Water Contract (the "Monterey Amendments") and the selection of the proper CEQA Lead Agency and (ii) the transfer by the Department of Water Resources of the Kern County Water Bank from the State to the Kern County Water District. The appellate court agreed with the trial court that the Department of Water Resources should have been the lead agency and reversed the trial court's holding that the environmental documentation was adequate. The matter is now in confidential mediation proceedings and principles for settlement have been reached. However, if a final settlement is not reached and litigation proceeds, a final decision to invalidate all or a portion of the provisions of the Monterey Agreement could have an adverse impact on the allocation of State Project water to Metropolitan.

A-11 OPERATION AND MAINTENANCE (O&M)

Not applicable for this project.

APPLICATION PART B

Engineering and Hydrological Feasibility

Not Applicable for this project.

APPLICATION PART C

C-1 CALIFORNIA ENVIRONMENTAL QUALITY ACT AND NATIONAL POLICY ACT

The proposed activity is not defined as a project under CEQA because it involves continuing administrative activities, such as purchases for supplies, general policy and procedure making (Section 15378(b)(2) of the State CEQA Guidelines). In addition, the proposed activity is not subject to CEQA because it involves other government fiscal activities which do not involve any commitment to any specific project which may result in a potentially significant physical impact on the environment (Section 15378(b)(4) of the State CEQA Guidelines).

The CEQA determination is: Determine that the proposed activity is not subject to CEQA pursuant to Sections 15378(b)(2) and 15378(b)(4) of the State CEQA Guidelines.

C-2 PERMITS, EASEMENTS, LICENSES, ACQUISITIONS, AND CERTIFICATIONS

Not applicable for this project

C-3 LOCAL LAND USE PLANS

Not applicable for this project

C-4 APPLICABLE LEGAL REQUIREMENTS

Not applicable for this project

APPLICATION PART D

D-1 NEED FOR PROJECT

The need for this project is crucial to the success of Metropolitan's HECW program. Without outside funding, most of Metropolitan's 26 member agencies will not participate in Metropolitan's HECW program, which offers a $35 washer rebate. Without a larger rebate amount, many of the smaller agencies do not have the funds and or resources to participate in Metropolitan's HECW program. Past programs have shown that the success of the HECW program is directly related to the amount of rebated offered.

This past July, with the assistance of a CALFED grant, Metropolitan launched its HECW program by increasing its washer rebate from $35 to $100. The response was almost immediate, with 17 of Metropolitans 26 member agencies signed up to participate in the HECW program. This program has been so successful that the 10,000 available washer rebates were exhausted in November 2002.

Without outside funding, the number of rebates processed per year drastically drop off, because only 5 agencies participated in Metropolitan's $35 washer rebate program.

Metropolitan is committed to water conservation projects in order to:

1) Reduce its demand for Bay-Delta water,

2) Achieve the objectives of its 2000 Regional Urban Water Management Plan,

3) Implement the components of its Integrated Water Resources Plan, and

4) Comply with its obligations as a signatory to the Memorandum of Understanding Regarding Urban Water Conservation in California (MOU). The replacement of conventional residential clothes washers with High Efficiency Clothes Washers (HECWs) fulfills Best Management Practice No. 6 of the MOU.

D-2 COMMUNITY INVOLVEMENT, SUPPORT, OPPOSITION

Metropolitan has met with and discussed this project with member agencies and their retail agencies. Both groups strongly support the project. In addition, Metropolitan's member agencies have long track record of using local community organizations in the implementation of their conservation programs. There continues to be a commitment to include local organizations in programs such as these, although quantification is not currently available.

Metropolitan's position on numerous boards and committees will be used to include a variety of potential supporters. Watershed councils, environmental non-governmental organizations, business roundtables, chambers of commerce are interested organizations that have expressed support for the program.

Present HECW rebate programs are well received by the buying public and the retail outlets. Energy utilities welcome water agencies' operation of these programs and their added help in promotion and outreach will further boost participation.

APPLICATION PART E

E-1 WATER USE EFFICIENCY IMPROVEMENTS

Conventional clothes washers currently use the second largest portion of water inside a residence, behind toilets. By successfully encouraging residents to purchase HECWs rather than conventional washers, about 7,000 gallons of water can be saved per year for each HECW installed. Over a 15-year product life, each HECW is expected to conserve 105,000 gallons (0.322 acre-feet). In total, the project would save 9,666 acre-feet of water over the life of the washers.

This project will increase water use efficiency by decreasing water supply demand by 9,666 acre-feet of water over the life of the washers. This results in the reduction of costs to acquire and treat this water.

E-2 OTHER PROJECT BENEFITS

Metropolitan and its member agencies will share the avoided cost benefit of not having to acquire, store, treat, and deliver the water that is saved.

These benefits are consistent with CALFED's objectives as, expressed in its Framework for Action (June 9, 2000) and the Record of Decision that followed. The proposed HECW program will increase the amount of water saved through conservation. Once all 30,000 HECWs are installed, they will save 9,666 acre-feet of water over the projected 15-year life of the machines.

This project is consistent with the objectives of the CALFED Bay-Delta Program. Implementation of the proposed conservation project will help Southern California offset growing demands that might otherwise be placed on the State Water Project system and the Bay-Delta region. Implementing local water use efficiency programs, such as the proposed project, also helps reduce conflict among Bay-Delta water users and stakeholders

In addition to saving water, HECWs can save up to 60 percent of the energy used with conventional washers. In light of the power situation in California, the installation of HECWs will be an important means of reducing demand for both electricity and natural gas. By using up to 40 percent less water than conventional clothes washers, HECWs require less heated water for washing. Also, because HECWs have much higher spin speeds than conventional washers, laundry from HECWs contains markedly lower moisture content than laundry from conventional washers. This, in turn, means less energy is required to dry the wash loads.

APPLICATION PART F

F-1 NET WATER SAVINGS

Total Net Project Water Supply Benefit – The total project water savings over the life 15-year life of 30,000 HECWs and their value are based on the table below:

Water Savings/Unit	# Units	Total Benefit		Present Value of Total Benefit
Acre-Feet / HECW	HECWs	Acre-Feet	$[2]	$ (2003)[3]
0.332[1]	30,000	9,666	$6,766,200	$4,041,314

1. Based on 7,000 gallons annual water savings per HECW and a 15-year machine life.

   Savings estimates range from 5,250 gpy (CUWCC paper prepared by M. Cubed, March 20, 2001 and stated as a conservative estimate) to 7,000 gpy (Appliance Standards Awareness Project, *National Clothes Washer Standard: FAQ*, no date), to as much as 8,550 gpy (*Primer on Laundry Efficiency*, A P.O.W.E.R. Staff Report, 1993).

   Machine life is generally estimated at 14-years, based on Appliance Magazine, *Appliance Life Expectancy/Replacement Picture*, September 1997. The *Bern Clothes Washer Study, Final Report*, Oak Ridge National Laboratory, March, 1998, indicates that, "…the average clothes washer in the U.S. would be a little older than what a typical lifetime estimate would otherwise suggest." Page 12. The lifetime of the machine was adjusted up by one year to 15-years to accommodate this expectation.

2. Based on a benefit of $700/acre-foot, level for 15 years.

3. Based on a discount rate of 6% and 15 years of savings per HECW, beginning in Year 2. For more details, see attached table 7.

F-1 NET WATER SAVINGS (CONTINUED)

Total Net Annual Water Supply Benefit

Table 4: Water Supply Benefits
(2003 Dollars)

Net water savings (acre-feet/year): 644.4

Table 4a. Avoided Costs of Current Supply Sources

Sources of Supply *(a)*	**Cost of Water ($/AF)** *(b)*	**Annual Displaced Water Supply (AF)** *(c)*	**Annual Avoided Costs ($)** *(d) (b x c)*
MWD	$700	644.40	$451,080
			$0
			$0
			$0
			$0
Total			**$451,080**

(c) Based on 7,000 gallons annual water savings for 30,000 HECWs and a 15-year life (see attached table 4 and Benefit/Cost Analysis Tables in appendix)

Table 4d. Total Water Supply Benefits

(a) Annual Avoided Costs of Current Supply Sources from 4a, column *(d)*	$451,080
(b) Annual Avoided Costs of Alternative Future Supply Sources from 4b, column *(f)*	0
(c) Annual Expected Water Sale Revenue from 4c, column *(h)*	0
(d) **Total Net Annual Water Supply Benefit ($)** (a+b+c)	$451,080

F-2 PROJECT BUDGET AND BUDGET JUSTIFICATION

Annual Capital costs (shown in appendix)

Table 1: Capital Costs

	Capital Cost Category *(a)*	Cost *(b)*	Contingency Percent *(c)*	Contingency $ *(d) (bxc)*	Subtotal *(e) (b+d)*
(a)	Land Purchase/Easement			0	0
(b)	Planning/Design/Engineering	300,000		0	300,000
(c)	Materials/Installation	3,000,000		0	3,000,000
(d)	Structures			0	0
(e)	Equipment Purchases/Rentals			0	0
(f)	Environmental Mitigation/Enhancement			0	0
(g)	Construction/Administration/Overhead	450,000		0	450,000
(h)	Project Legal/License Fees			0	0
(i)	Other			0	0
(j)	Total (1) (a + ... + i) (2)				$3,750,000
(k)	Capital Recovery Factor: Use Table 6				0.1030
(l)	Annual Capital Costs (j x k)				$386,250

Project Budget

1. Project budget items, by funding entity:

	b. Planning / Design / Engineering	c. Materials / Installation	g. Construction / Administration / Overhead	Totals
Proposition 13		$2,250,000	$450,000	$2,700,000
Metropolitan	$300,000	$750,000		$1,050,000
Total	$300,000	$3,000,000	$450,000	**$3,750,000**

b. Metropolitan's promotional efforts are part of the program's planning and design and are necessary to create awareness of the availability of the rebates. The program's success relies on broad dissemination of the information. Promotional efforts will consist of the following types of outreach: advertisements, point-of-purchase materials, manufacturer tie-ins, bill stuffers, and the like.

c. The rebate constitutes an installation subsidy, and so is budgeted as such.

30,000 units x $100 = $3,000,000

g. Proposition 13's funding of program administration makes implementing the program less of a financial burden on the part of the participating member agencies.

30,000 units x $15 per unit = $450,000 $15/unit can cover most of the cost of a vendor's services.

2. Metropolitan is providing cost-Sharing in the amount of $1,050,000 (25%). The rebate contribution of $25 per HECW is budgeted as part of the Conservation Credits Program. Metropolitan's funding for Conservation Credits will continue through the duration of the program. Metropolitan's Conservation Credits expenditures in recent years have averaged more than $10 million per year.

   Use of the $10 per unit promotional cost-share will be coordinated with the participating member agencies. It will be used either locally by them, or, if they request, regionally as implemented through the External Affairs Group within Metropolitan. Promotional efforts may include advertisements, point-of-purchase materials, manufacturer tie-ins, bill stuffers, website enhancements and other outreach ideas.

3. Assessment of Costs and Benefits

   a. Assumptions
      - Metropolitan benefit is $700 per AF.
      - 30,000 HECWs will be installed over 3 years.
      - 4,000 installed in year 1, 10,000 in year 2, 16,000 in year 3.
      - Each machine represents 0.02148 AFY savings
      - Machine life, and consequently the duration of savings, is 15 years

   b. Benefits and costs in 2003 dollars, not discounted
      - Benefits = $6,766,200
      - Costs = $3,750,000

   c. Benefits and Costs, by project entity

Entity	Benefit	Cost
Quantifiable Elements		
• Metropolitan	$4,041,314	$1,050,000
• Member Agencies	$4,041,314	$0
Non-quantified elements		
• Metropolitan	Expanded program	Administration
• Member Agencies	Added value to customer	Administration
• HECW purchasers	Rebate and utility savings	Uncovered cost difference
• CALFED	Reduced Bay-Delta demand	State administration of grants

F-2 Continued

Benefit/Cost Ratio based Project Present worth Equivalents

Present value project benefits are based on a discount rate of 6% and 15 years of savings per HECW, beginning in year 2 (See attached table 7 for details).

- Benefits = $4,041,314 (in 2003 dollars)

Present value project costs are based on a discount rate of 6% over a total of 3 years (See attached table 7 for details).

- Cost = $3,459,238 (in 2003 dollars)

Benefit/Cost (2003 dollars) = $4,041,314/$3,459,238 = 1.17

Benefit/Cost Ratio based on annual benefits and costs

Benefit /cost ratio by dividing the annual capital costs by the total net annual water supply benefit (As shown in the appendix, Table 5)

Table 5: Benefit/Cost Ratio

Project Benefits ($)(1)	$451,080
Project Costs ($)(2)	$386,250
Benefit/Cost Ratio	1.17

(1) From Table 4d, row (d): Total Annual Water Supply Benefits
(2) From Table 3. column (c): Total Annual Costs

F-3 Economic Efficiency

The Alternative Water Cost of Foregone Conservation in the Metropolitan Service Area

Summary

The Metropolitan Water District of Southern California is a wholesaler of water to its 26 member agencies. As part of its ongoing support of locally developed water and conservation, Metropolitan offers incentives of $250 per acre-foot of locally developed recycled, recovered, or desalted water and $154 per acre-foot of conserved water. Although these incentives appear to be unequal, they are equivalent when accounting for Metropolitan's cost of capital and the fact that conservation is typically funded through up-front payments and recycled, recovered, and desalted seawater is typically funded on production.

Metropolitan's $250 per acre-foot incentive is based on avoided cost analyses performed during the development of Southern California's 1996 Integrated Water Resources Plan. However, the total value of conservation funded through Metropolitan's programs transcends Metropolitan's direct avoided costs and incentives. Metropolitan's member agencies are the host of most all of Metropolitan's conservation programs and they also enjoy avoided cost of Metropolitan's water rate or $435 per acre-foot. This rate is often sited by the member agencies as their least cost marginal supply of water.

Adding the rate and incentive together, and accounting for the member agencies higher discount rate, the alternative water cost of foregone conservation in Southern California is approximately $700 per acre-foot. This value also approximates the marginal cost of water recycling in Southern California, which Metropolitan uniformly uses as its alternative regional cost of alternative water supplies. Although this estimate accounts for avoided infrastructure costs at Metropolitan, it does not include the value of avoided infrastructure development for the member agency or retailer and therefore this cost could be higher.

Detail

1. Metropolitan Incentives

    a. Equivalence of MWD Incentives

Year	Acre-feet	Recycling Payment	Conservation Payment	PV($250)	PV($154)
1	1	$ 250.00	$3,080.00	$ 250.00	$3,080.00
2	1	$ 250.00	$ -	$ 235.85	$ -
3	1	$ 250.00	$ -	$ 222.50	$ -
4	1	$ 250.00	$ -	$ 209.90	$ -
5	1	$ 250.00	$ -	$ 198.02	$ -
6	1	$ 250.00	$ -	$ 186.81	$ -
7	1	$ 250.00	$ -	$ 176.24	$ -
8	1	$ 250.00	$ -	$ 166.26	$ -
9	1	$ 250.00	$ -	$ 156.85	$ -
10	1	$ 250.00	$ -	$ 147.97	$ -
11	1	$ 250.00	$ -	$ 139.60	$ -
12	1	$ 250.00	$ -	$ 131.70	$ -
13	1	$ 250.00	$ -	$ 124.24	$ -
14	1	$ 250.00	$ -	$ 117.21	$ -
15	1	$ 250.00	$ -	$ 110.58	$ -
16	1	$ 250.00	$ -	$ 104.32	$ -
17	1	$ 250.00	$ -	$ 98.41	$ -
18	1	$ 250.00	$ -	$ 92.84	$ -
19	1	$ 250.00	$ -	$ 87.59	$ -
20	1	$ 250.00	$ -	$ 82.63	$ -
Total	20	$5,000.00	$3,080.00	$3,039.53	$3,080.00

Preceding is a 20-year example of payment steams for projects, such as conservation, that receive funding at $154 per acre-foot up-front compared to projects, such as recycling, that receive up to $250 per acre-foot on production. Column 1 shows the years of the compared projects 1 through 20. Column 2 shows that both projects are produce 1 acre-foot per year. If the project is water recycling, it can receive up to $250 per acre-foot produced in the year of production. Column 3 shows this payment. Alternatively, if the project is for conservation, it may receive $154 per acre-foot of projected production over an agreed life of the program. In this case, column 4 shows the up-front payment of $3,080 ($154 per acre-foot * 1 acre-foot per year * 20 Years) in year one of the program. Columns 5 and 6 show the comparable present value of payments, discounted at 6% (the typical long-term discount rate used by Metropolitan since 1996), under the two programs. This simple example yields results within 1.5% of each other. Under certain conditions the $154 per acre-foot yields more on a present value basis and sometimes this result is reversed, however this example is not atypical.

b. Added Value to Member Agencies with Higher Discount Rates

Typically, the discount rate for Metropolitan's member agencies is higher than Metropolitan's own discount rate. As a result, the member agencies see greater value in up-front payments for programs. If, instead of a 6% discount rate, the analysis used a higher discount rate of 7%, then the value of the up-front payment to member agencies climbs to a value of over $270 per acre-foot. This is a closer approximation of the value derived by member agencies from the Metropolitan conservation incentive program.

2. Metropolitan's Rate Structure and Member Agency Avoided Cost

Metropolitan charges unbundled rates for it water services, however adding its component part will derive an avoided aggregate rate. This aggregate rate in currently $435 per acre-foot for delivered treated water and is forecasted to keep pace with the consumer price index over the next ten years. Member agencies regularly use this price signal as their alternative cost of water. They also often use the cost of recycled water at approximately $700 per acre-foot and member agencies may soon use upwards of that number, as they seriously consider the introduction of seawater desalination into Southern California's water resource plans.

3. Total Avoided Cost

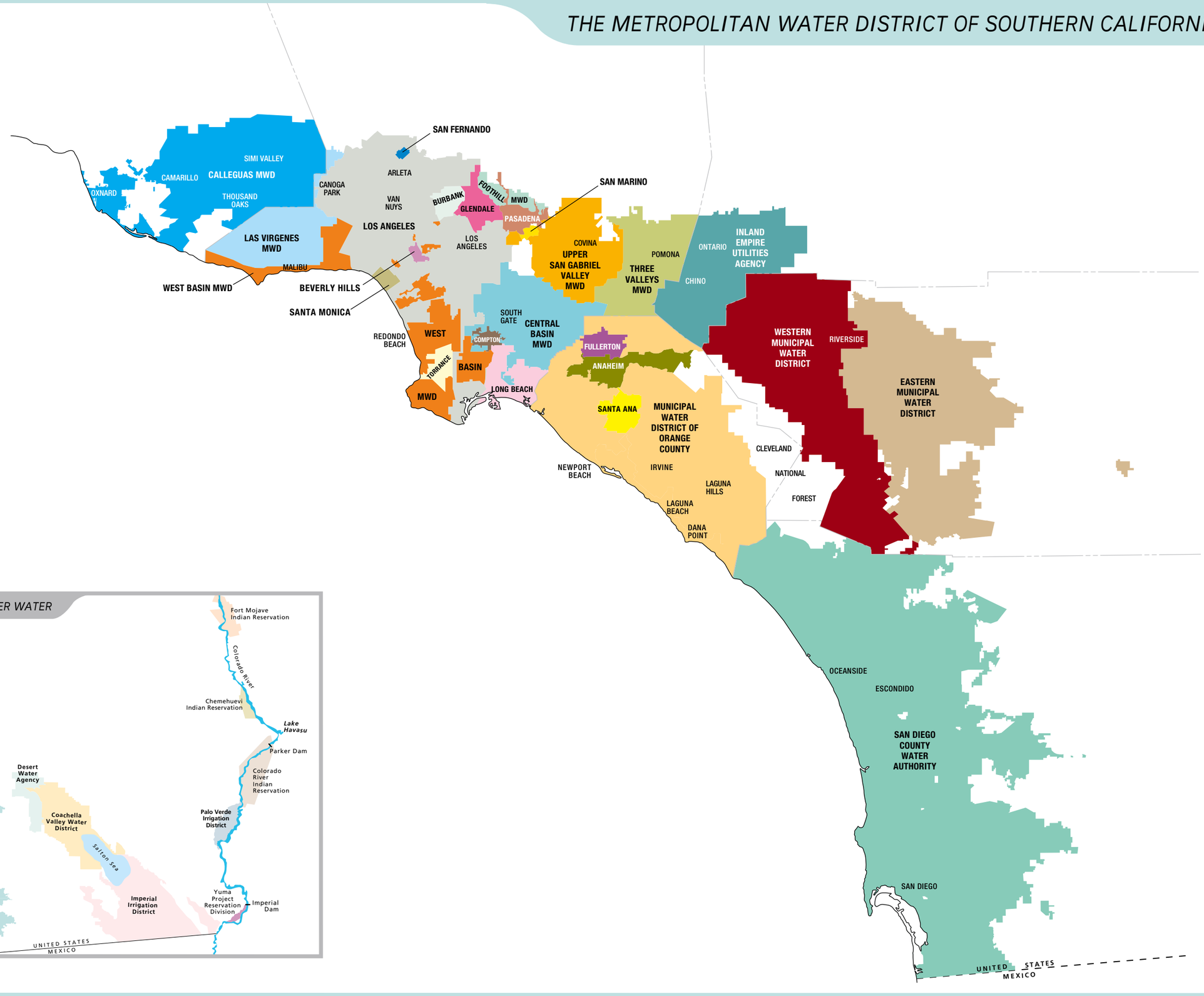
Using the member agency value of recycling ($700 per acre-foot) or the aggregate of Metropolitan's conservation incentives ($250-$270 per acre-foot) and avoided water rate (currently $435 per acre-foot), it is clear that the value of conservation in the Southern California region approximates $700 per acre-foot. This estimate does not account for potential member agency infrastructure savings or the forecasted increases in Metropolitan water rates, which if estimated could make these estimates higher.

Appendix- Benefit/Cost Analysis Tables

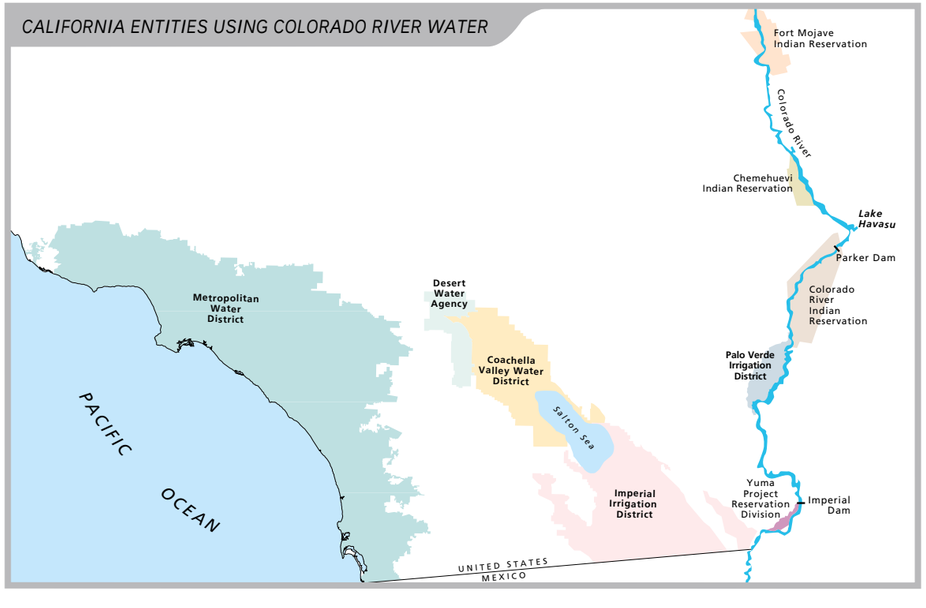
THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

N

METROPOLITAN'S MEMBER AGENCIES



CALIFORNIA ENTITIES USING COLORADO RIVER WATER



The mission of the
Metropolitan Water District
of Southern California
is to provide its service area with
adequate and reliable supplies
of high-quality water to meet
present and future needs in an
environmentally and
economically responsible way.

MWD
METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

POST OFFICE BOX 54153
LOS ANGELES, CA 90054-0153

www.mwdH2O.com

EA October 2001

Metropolitan's Member Agencies and Communities Served

Anaheim
Beverly Hills
Burbank
Compton
Fullerton
Glendale
Long Beach
Los Angeles
Pasadena
San Fernando
San Marino
Santa Ana
Santa Monica
Torrance

Calleguas Municipal Water District
- Bell Canyon
- Camarillo
- Channel Islands Beach
- Lake Sherwood
- Las Posas Estates
- Moorpark
- Oak Park
- Oxnard
- Pleasant Valley Heights
- Point Mugu
- Port Hueneme
- Simi Valley
- Santa Rosa Valley
- Somis
- Thousand Oaks

Central Basin Municipal Water District
- Artesia
- Bell
- Bellflower
- Bell Gardens
- Cerritos
- Commerce
- Cudahy
- Downey
- East Compton
- East La Mirada
- East Los Angeles
- Florence
- Graham
- Hawaiian Gardens
- Hollydale
- Huntington Park
- La Habra Heights
- Lakewood
- La Mirada
- Los Nietos
- Lynwood
- Maywood
- Montebello
- Norwalk
- Paramount
- Pico Rivera
- Santa Fe Springs
- Signal Hill
- South Gate
- South Whittier
- Vernon
- Walnut Park
- West Compton
- West Whittier
- Whittier
- Willowbrook

Eastern Municipal Water District
- Canyon Lake
- Good Hope
- Hemet
- Homeland
- Juniper Flats
- Lakeview-Nuevo
- Mead Valley
- Moreno Valley
- Murrieta
- Murrieta Hot Springs
- Perris
- Quail Valley
- Romoland
- San Jacinto
- Sun City
- Temecula
- Valle Vista
- Winchester

Foothill Municipal Water District
- Altadena
- La Cañada Flintridge
- La Crescenta
- Montrose

Inland Empire Utilities Agency
- Chino
- Chino Hills
- Fontana
- Montclair
- Ontario
- Rancho Cucamonga

Las Virgenes Municipal Water District
- Agoura
- Agoura Hills
- Calabasas
- Chatsworth
- Lake Manor
- Hidden Hills
- Malibu Lake
- Monte Nido
- Topanga
- Westlake Village

Municipal Water District of Orange County
- Aliso Viejo
- Brea
- Buena Park
- Capistrano Beach
- Corona del Mar
- Costa Mesa
- Coto de Caza
- Cypress
- Dana Point
- El Toro
- Fountain Valley
- Garden Grove
- Huntington Beach
- Irvine
- Laguna Beach
- Laguna Hills
- Laguna Niguel
- La Habra
- Lake Forest
- La Palma
- Leisure World
- Los Alamitos
- Mission Viejo
- Monarch Beach
- Newport Beach
- Orange
- Placentia
- Rancho Santa Margarita
- Rossmoor
- San Clemente
- San Juan Capistrano
- Seal Beach
- Stanton
- Tustin
- Tustin Foothills
- Villa Park
- Westminster
- Yorba Linda

San Diego County Water Authority
- Alpine
- Bonita
- Bonsall
- Camp Pendleton
- Cardiff-By-The-Sea
- Carlsbad
- Casa De Oro
- Castle Park
- Chula Vista
- Crest
- Del Mar
- De Luz
- El Cajon
- Encinitas
- Escondido
- Fallbrook
- Jamul
- Lakeside
- La Mesa
- Lemon Grove
- Leucadia
- Mount Helix
- National City
- Oceanside
- Otay
- Pauma Valley
- Poway
- Rainbow
- Ramona
- Rancho Santa Fe
- San Diego
- San Marcos
- Santee
- San Ysidro
- Solana Beach
- Spring Valley
- Valley Center
- Vista

Three Valleys Municipal Water District
- Azusa
- Charter Oak
- Claremont
- Covina
- Diamond Bar
- Glendora
- Industry
- La Puente
- La Verne
- Pomona
- Rowland Heights
- San Dimas
- Walnut
- West Covina

Upper San Gabriel Valley Municipal Water District
- Arcadia
- Baldwin Park
- Bassett
- Bradbury
- Covina
- Duarte
- El Monte
- Glendora
- Hacienda Heights
- Industry
- Irwindale
- La Puente
- Monrovia
- Montebello
- Pasadena
- Rosemead
- San Gabriel
- South El Monte
- South Pasadena
- South San Gabriel
- Temple City
- Valinda
- West Covina
- Whittier

West Basin Municipal Water District
- Alondra Park
- Angeles Mesa
- Carson
- Culver City
- Del Aire
- El Nido-Clifton
- El Porto
- El Segundo
- Gardena
- Hawthorne
- Hermosa Beach
- Howard
- Inglewood
- Ladera Heights
- Lawndale
- Lennox
- Lomita
- Malibu
- Manhattan Beach
- Marina Del Rey
- Miraleste
- Morningside
- Palos Verdes Estates
- Point Dume
- Portuguese Bend
- Rancho Dominguez
- Rancho Palos Verdes
- Redondo Beach
- Rolling Hills
- Ross-Sexton
- Topanga Canyon
- Parts of Topanga Park
- Victor
- View Park
- West Athens
- West Carson
- West Hollywood
- Westmont
- Windsor Hills
- Wiseburn

Western Municipal Water District of Riverside County
- Bedford Heights
- Canyon Lakes
- Corona
- Eagle Valley
- El Sobrante
- Green River
- Lake Elsinore
- Lake Mathews
- March Air Force Base
- Norco
- Orangecrest
- Rancho California
- Riverside
- Temecula
- Temescal
- Woodcrest